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ABSTRACT

This report highlights the important trends in adolescent drug use. Although the focus is on the abuse of alcohol, nicotine, marijuana, cocaine, heroin, and inhalants, it is important to remember that adolescents abuse a wide range and combination of drugs. This report also addresses state-of-the-art treatment methods, and summarizes research on risk factors and prevention efforts conducted over the past decade. The information on trends and treatment outcomes provides the critical information needed to direct new strategies for decreasing adolescent drug use in the 21st century. (Contains 13 figures and 49 references.) (ADT)

ADOLESCENT DRUG USE:
Trends in Abuse, Treatment and Prevention

Susan M. Gordon, PhD — *Director of Research*

CARON FOUNDATION
Excellence In Addiction Treatment

2000

The Caron Foundation is a non-profit organization whose mission is to provide an enlightened and caring treatment community in which those affected by the disease of addiction may begin a new life.

Since 1957, the Caron Foundation has helped more than 60,000 adults and adolescents recover from the pain of addiction and rebuild their lives.

About the Author:

Susan M. Gordon, Ph.D., is Director of Research at the Caron Foundation, one of the top chemical dependency treatment centers in the United States offering a complete continuum of care for adolescents as well as adults. Dr. Gordon has more than eight years experience in counseling and psychological evaluation of chemical addictions and mental health issues. She has worked extensively with women and adolescents.

Dr. Gordon previously was the Clinical Administrator of a residential facility for the treatment of eating disorders. She has conducted research and treatment in chemical addictions at the University of Pennsylvania Treatment Research Center.

Since 1986, Dr. Gordon has lectured and conducted seminars and workshops concerning adolescent drug use and mental health issues. She also has taught courses in Developmental Psychology and Psychology of Women at the university level.

Table of Contents

FOREWORD — *Sheila B. Blume, M.D.*

Medical Director of Alcoholism, Chemical Dependency and Compulsive Gambling Programs at South Oaks Hospital, Amityville, NY

When I became interested in the treatment of addictive disorders in 1962, adolescents were not often in treatment with a diagnosis of alcohol or drug dependence. As medical director of the New York State system's first alcoholism rehabilitation unit in the mid-60s, I recall admitting a 15-year-old boy. The event was so unusual that I considered writing up the case for publication. Although my adult male patients often gave histories of drinking heavily during their teens, they usually did not report serious life problems until their late twenties and seldom reached treatment before their thirties, or even forties. Fifteen years later I found myself directing an entire unit devoted to the treatment of adolescent alcoholics, most of them also dependent on a variety of other drugs.

This remarkable change was related to several factors, including the improved availability of treatment, earlier intervention and greater sensitivity to substance-related issues on the part of teachers, youth counselors, juvenile justice personnel and health professionals. However, I believe it is also related to the earlier initiation of tobacco, alcohol and other drug use among children and adolescents, the increased ease of access to these drugs and the earlier onset of and greater severity of addictive disorders among the young.

As Dr. Susan M. Gordon, Caron's Director of Research, notes, adolescent substance use, abuse and dependence, the age of first drug use (usually tobacco) and first drink are closely correlated with the later onset of substance-related problems. Prevention programs for elementary school-aged children are therefore aimed at delaying and preventing the onset of that use. In an effort to do so, we are engaged in a difficult battle, since the age at which young people begin to manifest other behaviors considered "adult", such as dieting, bodybuilding, using cosmetics, dating and engaging in sexual behaviors, has also been dropping progressively over the years. Arrayed against the effectiveness of prevention and education are many parts of the multi-billion dollar advertising and entertainment industries who glamorize and promote substance use by highlighting the "fun side" of using drugs without portraying the negative consequences that would follow in real life.

All of us who value our young people have a duty to inform ourselves about adolescent substance use, and whatever our role—as parents, professionals or members of society—do our best to improve this situation. To do so, we must take both personal and political action. I thank Dr. Gordon for her monograph, which will help us to understand this problem and to meet our obligation to the future.

PREFACE

As we move into the 21st century, we come to a crossroad in the prevention and treatment of adolescent drug use. The past decade has witnessed a number of changes in adolescent drug use. Abuse of alcohol, tobacco and marijuana remains high among teenagers. However, cocaine and heroin have now become more widely used by many adolescents. Inhalants continue to be the drugs of choice among adolescents. As more adolescents abuse and become dependent upon highly addictive drugs, we have seen higher numbers of youths enter treatment. Increasing evidence points both to the benefits of treatment for our young people and to the difficulties of maintaining positive outcomes.

The 1990s have taught us much about the background of adolescents who abuse drugs and alcohol, and we now can identify risks that may predict addiction. If these risk factors are identified and addressed early, adolescents have a better chance of leading drug-free lives. It is imperative for families and communities to utilize the prevention strategies developed and tested over the past decade.

The Caron Foundation is at the forefront of adolescent treatment and prevention efforts. For the past 40 years we have developed successful treatment programs that integrate proven strategies with the latest known facts on drug trends, risk factors and treatment outcomes. With our extensive experience and continuing research, the Caron Foundation has developed and continues to practice state-of-the-art prevention programs.

This report highlights the important trends in adolescent drug use. Although the focus here is on alcohol, nicotine, marijuana, cocaine, heroin and inhalant abuse, it is important to remember that adolescents abuse a wide range and combination of drugs. This report also addresses state-of-the-art treatment methods and summarizes research on risk factors and prevention efforts conducted over the past decade. The Caron Foundation's database on trends and treatment outcomes provides the critical information needed for the Foundation to direct new strategies for decreasing adolescent drug use in the 21st century.

Adolescent Drug Use Trends

National Trends

Vulnerability in Adolescence

Adolescence is difficult to define. Generally, we consider adolescence to span from 11 through 21 years of age. However, a 12-year-old adolescent may have more in common with a 10-year-old child than with a 19-year-old adolescent who may be facing the same issues and tasks that a 23-year-old adult might face.

Developmental Issues

Adolescence is characterized by significant changes in physical, cognitive and social development. The onset of puberty radically changes the adolescent's physique and alters the way adolescents think of themselves and how they are perceived by others. Growth spurts, the development of secondary sex characteristics and the redistribution of weight and muscle mass occur at different times for different adolescents. Adolescents are acutely aware of themselves and of how they believe they appear to others. Peer relationships become very important during this time period, and the influences of their friends are often more important than advice from their parents. Thus, the combination of a radically changing physical body plus the need to be part of a group can negatively impact self-esteem and peer relationships for adolescents who develop too "quickly" or "slowly" compared to their friends.

In addition, young adolescents begin to think more like adults. Children have very concrete thinking styles, while adults have the ability to think in the abstract. Adolescents begin to think in terms of an abstract future and start to comprehend distant consequences. However, the transition from a child's way of thinking to an adult's takes a long time to solidify. It is frustrating, but not unusual, for an adult to have a rational conversation with an adolescent and a short time later talk to the same teenager who no longer seems to make any sense. This shifting back and forth from child to adult is why rational messages about the dangers of drugs and other risky behaviors often are not understood by adolescents—they are not cognitively ready to understand the message.

Early adolescence may be the turning point for future drug use because adolescence also is characterized by experimentation. For instance, as adolescents begin to mature, they begin to form their personal and professional identities by experimenting with different kinds of behavior. However, experimenting with risky behaviors, such as substance use, can produce negative, immediate or long-term consequences.

Substance Abuse and Dependence

Just as it is difficult to define adolescence, it also is difficult to define adolescent substance abuse and dependence. In fact, there are no formal guidelines for diagnosing substance dependence in adolescents, which many professionals believe is different from the diagnostic guidelines used for adults. For the purpose of this report, substance abuse and dependence will be used in their traditional definitions. Abuse occurs when the use of a psychoactive substance increases the user's potential for experiencing harmful consequences. Dependency is a pattern of compulsive use despite the user experiencing serious negative consequences. Thus, even if an adolescent occasionally drinks alcohol, it is called "alcohol abuse" if the use is great enough to increase the youngster's risk for harm, such as poor school performance or a car accident. An inability to stop drinking for an extended period of time despite negative consequences is considered to be alcohol dependence.

People who are able to go through adolescence to age 21 without smoking, using drugs or abusing alcohol have a very good chance of never abusing drugs (National Center on Addiction and Substance Abuse at Columbia University, [CASA] 1997). Grant and Dawson (1997) found the chances of becoming dependent on alcohol decrease by 14 percent for every year a person is able to delay initiation to drinking. For every year a person delays the first drug use, he or she reduces the chances of drug dependence by 4 percent and drug abuse by 5 percent (Efreom 1999).

However, statistics on drug use show not only increased use of drugs by adolescents, but also use of drugs at younger ages. A 1998 national survey found that significant changes in drug use and attitudes occur between ages 12 and 13 (Luntz Research Companies 1998). During this critical time adolescents have much greater access to marijuana and other illegal drugs. Thirteen-year olds are three times more likely than 12-year olds to be acquainted with someone who sells or uses drugs. The largest increase in adolescent use of addictive substances occurs between the ages of 12 to 15 years.

Prevalence

National studies that monitor adolescent drug use, such as the Monitoring the Future Study ("Drug use by American young people" 1998) and the National Household Survey on Drug Abuse (Substance Abuse and Mental Health Services Administration [SAMSHA] 1998), show increases over the past decade

in adolescent use of marijuana, inhalants, nitrites, hallucinogens, LSD, PCP, cocaine, crack cocaine, heroin, stimulants, ice, barbiturates, tranquilizers, cigarettes and steroids.

The trend toward increased availability of illicit drugs to our young people is disturbing. The Commission on Substance Abuse at Columbia University (CASA 1997) found that illicit drugs are easily available at American schools. More than 70 percent of students reported that it is easy to buy drugs at school. One-fourth of adolescents recently surveyed said they could obtain acid, cocaine or heroin within 24 hours, and almost half the students surveyed thought they could eventually find dealers for these drugs (Luntz Research Companies 1998).

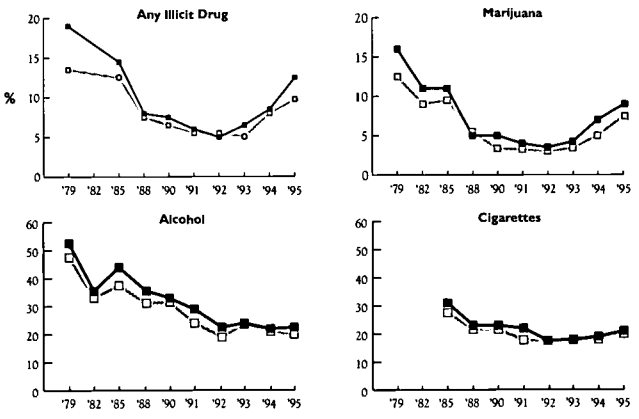
Gender and Ethnicity

A significant gender-related change in drug use can be seen in Figure 1. In the past, adolescent boys used illicit drugs at higher rates than girls. Beginning in 1991, however, the gender gap had drastically decreased the insignificant differences in use for adolescent girls and boys, except for binge drinking which remains significantly higher for males.

More alarming is the finding that adolescent girls appear more vulnerable to developing substance dependence than do boys who use drugs and alcohol (Kandel et al. 1997). Although the association between drug use and criminal activities is becoming stronger for adolescent girls, girls continue to have fewer criminal arrests, probation or parole than do boys (SAMSHA Office of Applied Studies 1997).

Rates of illicit drug use among youths are similar across white, African-American and Hispanic populations, although adult African-Americans tend to use illicit substances at slightly higher rates than whites or Hispanics (SAMSHA 1998). Adolescent white females have more severe drug use than do African-American or Hispanic girls. However, there are no significant differences in severity of use among teenage males (SAMSHA Office of Applied Studies 1997).

Figure 1: Percentage Reporting Past-Month Substance Use Among Adolescents Aged 12-17, by Gender 1979-1995



Source: SAMSHA, Office of Applied Studies, Substance use among women in the United States, 1997.

Gateway Drugs

Research concerning "gateway" drugs has produced impressive evidence implicating the role of cigarettes, marijuana and alcohol as precursors for other drug use among adolescents. CASA (1997) found that adolescents who smoke cigarettes and drink at least once a month are 30 times more likely to smoke marijuana than young people who neither smoke cigarettes nor drink. In addition, teenagers who use all three gateway drugs are 17 times more likely than other teens to use another drug, such as cocaine, heroin or acid. It also appears that the time interval is decreasing between a person's first use of marijuana and first use of heroin (Epstein and Gfoerer 1998).

The use of cigarettes, marijuana and alcohol as gateway drugs appears to affect adolescent boys more than girls. CASA (1997) also found that teenage boys who smoke cigarettes or marijuana or drink alcohol are 29 times more likely to progress to harder drugs than boys who do not, while girls who use these drugs are 11 times more likely to go on to other drugs than girls who do not use.

There also are disturbing relationships between gateway drugs, age and frequency of use. Using drugs at an early age, and using them frequently, strongly predicts use of other illicit drugs later on (CASA 1997). In addition, frequent adolescent users of marijuana are much less likely than occasional users to stop using the drug in adulthood (Chen and Kandel 1998).

Consequences

Drugs and alcohol negatively affect the physical, emotional and intellectual growth and development of adolescents and can produce results that may sabotage the rest of the person's life. Drugs and alcohol impede the young person's ability to learn because they impair judgment, short-term memory and concentration. They increase the chances of a person developing cancers, heart and lung diseases and liver diseases later in life, and they disturb relationships with friends and family. There is also a relationship between illegal drug use and other illegal activities, which can lead to antisocial and criminal behaviors that can have a long-term effect on the adolescent's life.

A major effect of drug and alcohol abuse is in the increase in risk-taking behavior (Kokotailo 1995). The dangers of high-risk behaviors include unwanted

pregnancies, sexually transmitted diseases, blood-borne diseases, such as HIV and hepatitis, commission of violent acts, and emotional and physical trauma. In addition, overdosing or combining drugs can and does kill!

Specific Drug Trends

As we have seen, adolescents abuse a wide variety of drugs, and the drugs described in this section represent only a few of the dangerous substances used by our young people. We selected alcohol, tobacco and marijuana for more detailed analysis because they are gateway drugs. We go on to discuss cocaine and heroin because they represent two of the more addictive substances that are increasingly used by adolescents. And finally, we look at inhalants and "club drugs", which may be silent killers of our youths. It also is important to recognize that adolescents often combine drugs to produce more intense highs or to moderate unpleasant side effects (CASA 1997).

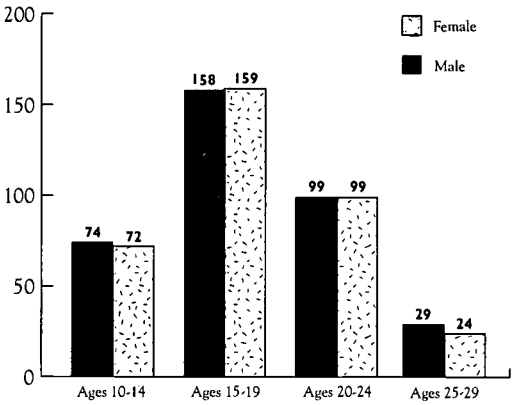
Also, adolescents are vulnerable to abusing prescription and non-prescription medication. These drugs are not discussed in detail because of their number and variety. For example, adolescents abuse drugs as varied as controlled medications, such as methylphenidate hydrochloride (brand name Ritalin) for its stimulant properties, to over-the-counter cough and cold preparations which may have more than 40 percent alcohol content. Abuse occurs when the drugs are taken without a prescription when required, when they are used more than the prescribed or recommended dosage, when the user takes them for reasons other than the intended purpose, or when they are combined with other drugs for dangerous effects. Usually harmless when used correctly, over-the-counter and prescription medications can become fatal or have long-term negative effects when used improperly.

Alcohol

Trends

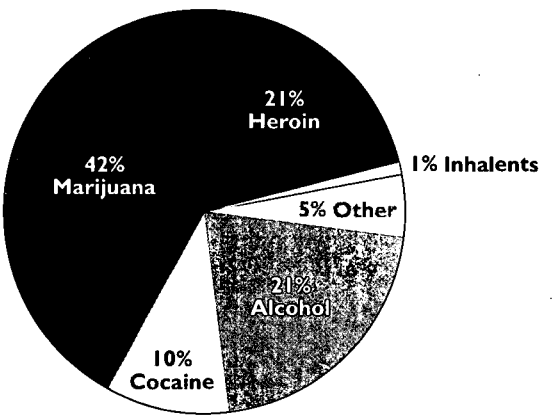
Alcohol use by American adolescents seems to be declining in the late 1990s as young people appear to perceive greater risk from weekend binge drinking ("Drug use by American young people" 1998). However, alcohol abuse remains a major problem in adolescence. One-third of high school seniors in 1998 reported being drunk at least one time in the month prior to being interviewed. In 1997, it was estimated that two million of our young people could be categorized as "heavy drinkers" who would consume more than five drinks at a time, on at least five different days per month. As illustrated by Figure 2, young people between the ages of 15 to 19 comprised

Figure 2: Age-Specific Rates of Alcohol Initiation During 1991-1995, by Gender



Source: SAMSHA, Office of Applied Studies, Substance use among women in the U.S., 1997.

Figure 3: Primary Substance Abuse by Adolescents in Treatment, 1998



Source: Caron Foundation.

the largest group of new drinkers, despite legal prohibition against under-age drinking.

At the Caron Foundation, approximately 20 percent of the patients in our primary adolescent program are treated for alcohol abuse or dependence (Figure 3).

Physical and Psychological Effects

Alcohol produces an initial "high" and a decrease in anxiety and inhibition. Larger amounts can produce sedation, as well as impaired judgment and coordination. Too much alcohol may even cause death due to its effects on the heart and breathing.

However, the main threat to life from alcohol comes from risky behaviors. Adolescents cause one-quarter of alcohol-related fatal motor vehicle accidents. Thirteen percent of adolescents recently surveyed reported riding in a car with an intoxicated driver (Luntz Research Companies 1998).

Marijuana

Trends

Marijuana is the illicit drug most often used by adolescents (CASA 1997) and its use among adolescents has more than doubled from 1992 to 1997. In 1997, marijuana use was at its highest level since 1980, with almost one youth in 10 (9.4 percent) using it. In fact, the overall increase of use in the general population in the 1990s can be attributed mainly to increased use by adolescents. Although adolescents appear to use marijuana slightly less often than adults, teenagers use more marijuana in total than adults (Chen, Kandel, and Davies 1997).

This trend represents a drastic change from the last large upsurge in marijuana use in the late 1960s and early 1970s when young adults, 18 to 25 years old, were responsible for the increase. According to the recent Pulse Check: Trends in Drug Abuse (Office of National Drug Control Policy [ONDCP] 1998), users of marijuana tend to be younger than users of other drugs. Adolescents are more likely than adults to become dependent on marijuana because teenagers appear to be more sensitive to its effects (Chen, Kandel, and Davies 1997).

Between one-third and one-half of people in treatment for marijuana abuse or dependence are under 20 years old. In fact, almost one-half of adolescents in treatment at the Caron Foundation's adolescent primary care unit are admitted for treatment for marijuana abuse (Figure 3). Almost 50 percent of adolescents who use marijuana say they first used at age 13 or younger (Luntz Research Companies 1998). This trend toward early initiation is very disturbing because early initiation is a very important predictor of regular marijuana use (Kandel and Davies 1992).

Physical and Psychological Effects

Marijuana usually is smoked, although it can be eaten when baked into foods. It initially produces feelings of euphoria and later, drowsiness. Stopping marijuana use abruptly has been shown to produce withdrawal symptoms in adolescents, including insomnia, irritability, trouble concentrating, depression, hallucinations, tremors, sweating and increased body temperature, fast heart rate, muscle pains and nausea (Crowley et al. 1998).

Use of marijuana can damage health over time and it can also produce immediate harm (Greenblatt 1998). Marijuana often impairs short-term memory, thinking and concentration. Heavy marijuana use can negatively affect hormones for males and females. Frequent marijuana users suffer from respiratory illnesses similar to the ones that tobacco smokers endure, and they have a higher risk of cancer than tobacco smokers. Marijuana dependence seriously interferes with other activities of adolescents, such as responsibilities at school and home (Crowley et al. 1998).

Marijuana use also is associated with behavioral problems among adolescents. Greenblatt (1998) found that adolescents who use marijuana are more likely than nonusers to have social problems relating to their peers. They also show greater delinquent, criminal and aggressive behavior, greater psychological problems symptomatic of depression and anxiety, as well as cognitive impairment.

Tobacco

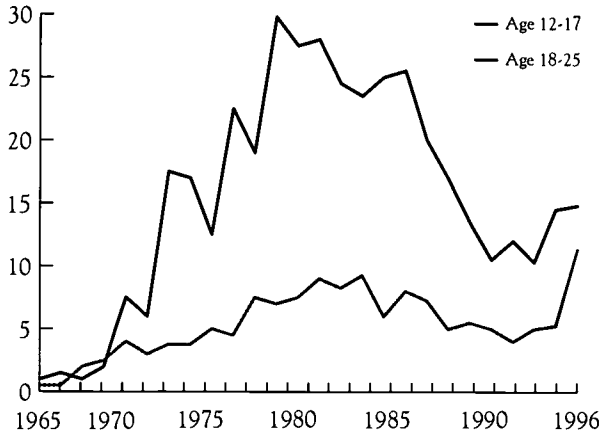
Trends

Tobacco use also may be decreasing according to the most recent 1998 results of the Monitoring the Future Study ("Smoking among American teens" 1998). The study found that since 1995 there has been a rise in the number of students who see smoking as dangerous. However, smoking rates continue to be very high among adolescents, with almost one-fifth of eighth graders, more than one-fourth of tenth graders, and over one-third of seniors smoking. Even though access to tobacco by youths is restricted by law, three-fourths of eighth graders and nine-tenths of eleventh graders report that it would be easy to get cigarettes. Rates of smoking among adolescent girls have risen in proportion to boys. Although more adult men than women smoke, slightly more young women than teenage males smoke.

Physical and Psychological Effects

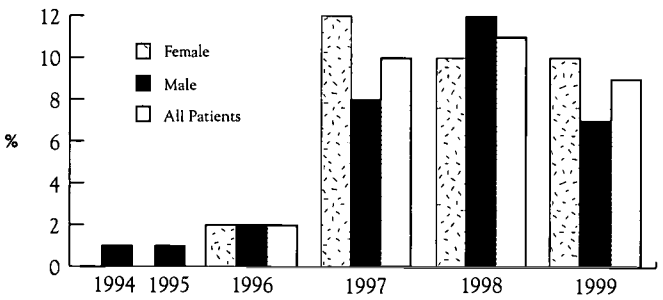
Tobacco has thousands of chemical compounds, many of which are carcinogenic. The primary active ingredient is nicotine, a poisonous stimulant. Nicotine reaches the brain very quickly when it is inhaled and produces a strong addiction, although smokeless forms of tobacco also are highly addictive. Almost one-fourth of adolescents surveyed said they are unable to stop smoking, although they know it is bad for them (Luntz Research Companies 1998). Weight and body-conscious adolescent girls and young women may be especially vulnerable to nicotine addiction because it acts as an appetite suppressant. Much has been publicized about the dangers of nicotine, but many people may not realize that one-third of youths who become addicted to nicotine will die from nicotine-related causes (CASA 1997).

Figure 4: Age Specific Rate of First Time Use of Cocaine, 1965-1996



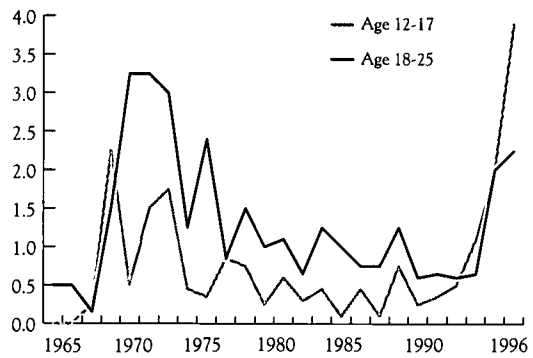
Source: SAMSHA, Office of Applied Studies, Preliminary results from the 1997 national household survey on drug abuse, 1998.

Figure 5: Cocaine Preference Among Adolescents in Treatment, 1994-1999



Source: Caron Foundation

Figure 6: Age Specific Rate of First Time Use of Heroin, 1965-1996



Source: SAMSHA, Office of Applied Studies, Preliminary results from the 1997 national household survey on drug abuse, 1998.

Cocaine

Trends

Cocaine continues to tempt adolescents. In 1997, new adolescent users of cocaine rose to their highest numbers in the past 30 years. Figure 4 shows that first-time use of cocaine by adolescents age 12 to 17 has continued to rise since 1965 despite a sharp decline in first-time use by young adults ages 18 to 25. Other surveys ("Drug use by American young people" 1998) indicate that adolescents are increasing their use of crack cocaine while their use of powdered cocaine is leveling off. The rate of cocaine use by adolescents admitted for treatment at the Caron Foundation has slowly risen over the past decade (Figure 5).

Physical and Psychological Effects

Cocaine affects the central nervous system as a stimulant. The more quickly it enters a person's system the more intensely and more briefly the person will feel the "high." As the euphoria dissipates, the user often becomes anxious, depressed, confused and aggressive. Over time cocaine users develop a tolerance for the drug and require more of it to become high. By combining cocaine with baking soda and water and heating it, a user makes a rock known as "crack." Crack cocaine is the most potent form of the drug because it is smoked, allowing the drug to enter the system extremely quickly. It is also highly addictive.

Cocaine produces many negative effects on the body, including appetite suppression and increased temperature, heart rate and blood pressure. Long-term use can produce paranoia and negative physical effects, such as weight loss and epileptic seizures. An overdose can cause death, especially if used in combination with alcohol.

Young women and adolescents with eating disorders or distorted images of their bodies may be particularly susceptible to cocaine abuse due to its ability to act as an appetite suppressant. For these women reducing their appetites, alone, may be their primary reason for using the drug. A high rate of cocaine and drug abuse among women with eating disorders has been widely recognized (Weiss 1992).

Heroin

Trends

Heroin use has risen to its highest level of adolescent use in the past 30 years and has doubled since 1991 (CASA 1997). As you can see from Figure 6, the 1990s witnessed a dramatic increase in the numbers of adolescents between the ages of 12 to 17 years who have tried heroin at least one time. This alarming increase is much higher than first-time use by young adults from ages 18 to 25 years. Currently, more

adolescents at the Caron Foundation are in treatment for heroin than for cocaine and a number of other drugs (Figure 3).

Many of the new users smoke, sniff or snort heroin, which has become easily available in potent pure forms (Epstein and Gfoerer 1998; "Information about Heroin" 1998). Many of these new adolescent users begin with the false belief that snorting heroin is not addictive. Not only is heroin purer today and more potent, its price has decreased, leading to its greater availability (Schwartz 1998). On a hopeful note, the most recent results from the Monitoring the Future Study ("Drug use by American young people" 1998) show a decrease in adolescent heroin use for 1998, along with an increase in the perceptions of its danger.

Physical and Psychological Effects

Heroin is made from opium. Its main active ingredient, morphine, affects the central nervous system. It produces an intense euphoria, increased self-esteem and insensitivity to pain. It quickly becomes physically addictive as users develop tolerance. Increasingly greater amounts of the drug are required not only to produce the high, but also to ward off physically painful withdrawal symptoms. Physical problems associated with heroin include lung infections, liver dysfunction, neurological disorders and blood-borne infections, such as HIV and hepatitis from sharing needles. Overdoses of heroin also can cause death. In 1995 young people less than 26 years of age accounted for 8 percent of all heroin-related deaths (Epstein and Gfroerer 1998).

Female Heroin Use

Recent reports noted increases in female users of heroin and in heroin users from higher socioeconomic and suburban communities (ONDCP 1998). Although we do not yet know the reasons behind the increase in heroin use among female adolescents, evidence points to connections to body image and relationships. CASA (1997) noted the "heroin chic" look of "emaciated, despondent, sunken-eyed, pale-skinned young models" (p. 56) give a negative message about beauty to vulnerable young women and may be related to the increase in female users of heroin. They also found that young women are more likely than young men to know another adolescent who uses hard drugs, leading to greater access and, perhaps, peer pressure, for the girls (Luntz Research Companies 1998).

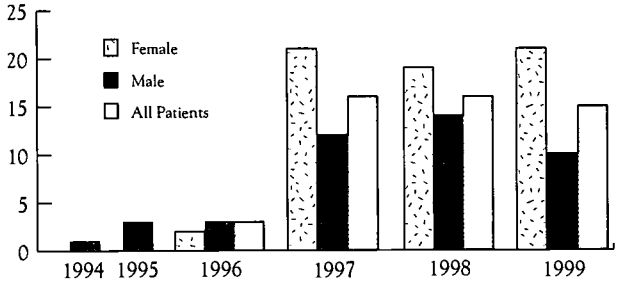
The Caron Foundation has seen disturbing upward trends in heroin use by females over the past decade (Figure 7) despite a recent leveling off for males. In order to better understand this trend, research interviews were conducted with two seemingly different adolescent females. Cary[1] is an older adolescent who has been injecting heroin for more than two years. At first she sniffed heroin, but after a year changed to intravenous use in order to regain the "high." Cary had started drug use at 10 years of age with marijuana and alcohol. In adolescence she progressed to cocaine and acid, and then to heroin. By the time she entered treatment at the Caron Foundation she was spending more than $300 a day to sustain her habit—money she obtained through stealing and prostitution.

Tara[1], who is slightly younger than Cary, began sniffing heroin six months ago. She has been able to avoid intravenous injections thus far because of her fear of sharing needles. However, this young woman from the suburbs risked her safety by going alone into high drug and crime areas to purchase up to $70 worth of heroin every day. As a young adolescent, she began her dangerous journey into drug use with alcohol, marijuana and then cocaine and "a bunch of other drugs."

Although Cary and Tara come from different socioeconomic groups and family structures (Cary's working-class mother is divorced and Tara's middle-class family is intact), they have many similarities. Both young women liked the way heroin "keeps you thin" and used the drug to lose weight. In addition, they liked the high and numb feelings it produced. They both appear terrified of the effects the drug has over a person and agreed that it is more difficult to stop using this drug than any other drug they had used. As Cary said, "Heroin will kill you. There is an unbelievable progression and it controls you like no other drug. The death is slow and painful."

[1] *Names and other identifying information have been changed to protect confidentiality.*

Figure 7: Heroin Preference Among Adolescents in Treatment, 1994-1999



Source: Caron Foundation.

Inhalants

Trends

Inhalants, which include a wide variety of household items, are abused by more than 15 percent of American adolescents. Just as they do with other drugs, adolescent females are beginning to abuse inhalants at the same rates as males. However, recent reports indicate that inhalant use is beginning to decrease, despite increases prior to 1995 ("Drug use by American young people" 1998).

Most of us underestimate the prevalence and dangers of inhalant abuse. Inhalants do not appear to be dangerous—many are found on supermarket shelves and can be easily purchased. Also, inhalant abuse occurs mainly among children and young adolescents. The young age of the abusers and episodic regional use patterns also may encourage the myth that inhalants are only youthful fads and are not dangerous (National Institute on Drug Abuse [NIDA] 1994). More than 50 percent of adolescents do not think that inhalants are dangerous and little effort has been made to educate parents and teenagers about their dangers (CASA 1997).

This lack of attention to the dangers of inhalants may result in small treatment populations. For example, at the Caron Foundation in 1998 only one percent of adolescents were in treatment for inhalant abuse (Figure 3).

Physical and Psychological Effects

Inhalant abuse is responsible for untold deaths of adolescents through suffocation and heart failure. Prolonged abuse can result in permanent hearing loss, limb spasms and brain damage (NIDA 1994).

There are three major categories of inhalants—volatile solvents, nitrates and anesthetics. Volatile solvents can be found in a wide variety of products, ranging from airplane glue and rubber cement to spray paint, hair spray, air fresheners, paint and nail polish removers, gasoline, and whipped cream. Nitrite abuse may be on the decline because products containing certain nitrates were banned in 1991 (NIDA 1994). The main substance of anesthetic abuse is nitrous oxide, which is used by physicians and dentists for general anesthesia. It also is found in large balloons and is sold illegally. Abuse of anesthetics causes a rapid type of intoxication that starts with slight stimulation, followed by drowsiness, inhibition, lightheartedness, agitation, and, possibly, loss of consciousness.

Club Drugs

Trends

"Club" drugs comprise a widely varied group of drugs that currently are being abused by young people at dance clubs, parties and bars. They also are known as "designer" drugs. National drug monitoring services recently have noted dangerous increases in the use of these drugs (NIDA, December 1999). Among the more popular club drugs are MDMA (also known as Ecstasy, XTC, Adam, Clarity, Lover's Speed), GHB (a.k.a. Grievous Bodily Harm, G, Liquid Ecstasy, Georgia Home Boy), Ketamine (a.k.a. Special K, Vitamin K, Cat Valiums,), Rohypnol (a.k.a. Roofies, Rophies, Roche, Forget-me pill), Methamphetamine (a.k.a. Speed, Ice, Meth, Crystal, Crank, Fire, Glass) and LSD (a.k.a. Acid, Boomers, Yellow Submarine). Some of these drugs are colorless, tasteless and odorless, and have been unknowingly given to people in order to sedate or intoxicate them. GHB has been used in sexual assaults and "date rapes".

Physical and Psychological Effects

Club drugs are used for a variety of effects, including stimulant, psychedelic effects. One of the most alarming aspects of club drugs is the unpredictability of the consequences of use. Many of the drugs are made in small illegal laboratories or home kitchens and the chemicals used to manufacture them, as well as possible contaminants, are not controlled. However, as Alan Leshner, Director of NIDA notes, "No club drug is benign" (NIDA, December 1999, p. 1). All of the club drugs have negative short-term physical effects. Some club drugs also have unintended consequences of psychotic behavior, aggression and violence, overdoses, and fatalities. Long-term effects of some of the club drugs may include permanent neurological damage.

TREATMENT

Identifying Who Needs Treatment

It is not easy to identify adolescent substance abusers because of the wide swings in behavior and moods that are normally common among adolescents. However, the Center for Substance Abuse Treatment has identified a number of indicators of possible substance abuse (Figure 8). Having any one of the substance use disorder-related indicators is a major sign that the adolescent may be suffering from substance abuse or dependence. Having any one of the psychosocial indicators also suggests that the adolescent may be experiencing problems—but not necessarily caused by substance abuse.

Figure 8: Indicators for Assessment

Substance Use Disorder-Related

- Use of substances during childhood or early childhood years
- Substance use before or during school
- Peer involvement in substance use
- Daily use of one or more substances

Psychosocial

- Physical or sexual abuse
- Parental substance abuse *(including driving under the influence/driving while intoxicated)*
- Sudden downturns in school performance or attendance
- Peer involvement in serious crime
- Marked change in physical health
- Involvement in serious delinquency or crimes
- HIV high-risk activities *(e.g., intravenous drug use, sex with intravenous drug user)*
- Indicators of serious psychological problems *(e.g., suicidal ideation, severe depression)*

Source: Screening and Assessing Adolescents for Substance Use Disorders. Winters, K.C.; 1999a.

Treatment Issues Highlight Separate Treatment Needs

Substance abuse treatment for adolescents differs in many ways from adult-focused treatment. Adolescents have special developmental needs, and the laws and regulations governing their treatment are different from those governing adults. Because of the different issues and the different milieu required for treating adolescents, it is advisable to separate adolescent treatment from adult treatment programs.

Many adolescents come into treatment before they meet the criteria for substance dependence. They often are less motivated for treatment than adults and more often enter treatment due to an external force, such as pressure from their parents, school or the juvenile justice system (Jainchill, Bhattacharya and Yagelka 1995). Adolescents benefit from treatment approaches that increase their motivation and commitment to recovery, and their programs often are less confrontational than adult treatment. Also, family therapy and education are important components of adolescent treatment.

Adolescents also differ from adults in that they are more likely to abuse one of the gateway drugs (alcohol, tobacco or marijuana) instead of other drugs (Figure 3).

Adolescent treatment also needs to focus on developmental issues, such as educational and career goals. Inpatient and residential programs should provide educational and vocational resources and offer formal schooling that is integrated into the patient's treatment. Learning disorders that may predispose some adolescents to substance abuse should be diagnosed and addressed.

Peers are a significant influence in adolescence. Therefore, treatment programs should address this issue through the development of drug and alcohol refusal skills, conflict resolution skills, and by supporting healthy peer monitoring of each other (Winters 1999b).

Also, adolescents comprise an especially vulnerable and easily influenced population and, unfortunately, may learn negative behaviors from older patients. For that reason, compared to adults, adolescents often receive more staff supervision and guidance and more structured time, and have less influence in the management of their programs (Winters 1999b).

Finally, adolescent treatment should address the needs of specific populations. Young teenagers face issues that are different from those faced by older teens. Ethnicity and immigrant cultures also vary, and treatment providers who understand their strengths and limitations can enhance individual and family treatment. Since adolescents with substance abuse problems are more likely than their peers to have a coexisting psychiatric problem, it is essential for treatment programs to correctly diagnosis and address the other disorders.

The special needs of young women may be addressed in gender-separate and gender-specific treatment. A number of innovative treatment programs, such as those in the adolescent programs at Caron Foundation, have separated treatment programs by gender and have included specific treatment modules to address the specific needs of the population. For example, as we have seen, young women are at risk for eating disorders. Treatment components that address body image and nutritional issues may reduce the abuse of substances for dieting.

Types of Treatment

A number of different treatments are available for adolescent substance abusers depending upon the history and severity of abuse and stage of recovery. Treatment focuses on breaking the pattern of abuse and sustaining abstinence. It is not unusual for adolescents to return to more intensive levels of care following escalation of substance abuse. These periods of relapse do not necessarily indicate that prior treatment did not work—instead, successful relapse treatment builds upon

what was learned (but not used) in prior treatment.

There is no single treatment program that is effective for all adolescents. Like adults, adolescents differ in severity of the addiction, comorbidity, social, educational and behavioral problems, and involvement in the juvenile or criminal justice system. These issues, along with the ones identified in the previous section, will indicate which treatment program is best for which adolescent. Research and practice have consistently shown that effective treatment focuses on the specific needs of the individual.

Chemical addiction treatment for adolescents falls under two broad categories: inpatient and outpatient treatment. Both of these categories has different levels of care and are appropriate for patients with differing degrees of severity or comorbid problems. Large treatment facilities, such as the Caron Foundation, encompass a number of these treatment programs. However, even the more extensive programs do not attempt to reach all types of adolescents, but instead focus on developing and improving a special niche. Adolescents who do not meet the treatment criteria of a specific program should be referred to a more appropriate setting.

Inpatient Treatment

Inpatient treatment options consist of the most intensive and restrictive levels of care and range from Medically Monitored Inpatient Treatment and Residential Treatment to Halfway Houses and Group Home Living (Schonberg, 1993).

Medically Monitored Inpatient Treatment

This level of treatment consists of 24-hour medically directed or monitored evaluation and treatment. It is appropriate for adolescents who require detoxification, psychiatric and/or medical evaluation or services or a secure structured environment. Adolescents who have extensive drug use histories, who require medically monitored detoxification, who have dual diagnosis issues, or who have social or behavioral problems often begin treatment in this type of setting. The duration of this level of care generally ranges from seven to 45 days.

The Caron Foundation Adolescent Primary Care Program serves moderately impaired adolescents. The program focuses on building the primary steps to recovery.

Residential Treatment

Residential Treatment encompasses a variety of around-the-clock programs, including Extended Care programs and Therapeutic Communities (TC). Therapeutic Communities, also known as Intensive Residential Treatment (Schonberg, 1993), have planned lengths of stay from six to 12 months. Treatment at a TC is highly structured and often employs a confrontational approach in order to facilitate positive behavioral changes. This model of treatment is designed for adolescents with severe behavioral, social or psychological problems. Due to the multiple areas that need to be addressed in treatment, many TCs offer comprehensive services on site.

Less intensive 24-hour treatment is found in Extended Care programs, such as the ones at the Caron Foundation. These programs tend to be less confrontational than TCs and are designed for adolescents with fewer social and behavioral problems than found in TCs. Similar to other residential programs, Extended Care utilizes the entire treatment community, including staff and other patients, in order to create a milieu to support recovery. Extended Care offers more counseling and support services than Halfway Houses and Group Living programs. The Extended Care approach to treatment is designed to support the long-term recovery of adolescents with histories of extended drug and alcohol abuse. A lengthy period of separation from community triggers to use and immersion in a safe recovery community with group and family counseling may enable the adolescent to develop healthy coping skills for the return home. Lengths of stay in Extended Care programs tend to be flexible based on the adolescent's level of severity and recovery rates.

Outpatient Treatment

The treatment continuum progresses to long-term outpatient programs in which the adolescent leaves the treatment center to resume life at home or at another safe setting. The purpose of outpatient treatment is to enable the adolescent to maintain abstinence within the larger community (Spear and Skala 1995). There are a number of outpatient addiction treatment programs, including Intensive Outpatient Treatment and group, individual and family therapies. These programs are designed to promote recovery within the adolescent's community setting. They are appropriate for adolescents who have relatively stable and well-functioning families and support networks, who do not have additional significant psychological or behavioral symptoms, who are able to function with a minimum of adult supervision, and who exhibit motivation for recovery. Adolescents who have completed inpatient or residential levels of care generally continue their aftercare in outpatient treatment.

Intensive Outpatient Programs

Since the first couple of months following rehabilitation are the riskiest for the adolescent, (Spear and Skala 1995) recommend intensive treatment at that time. Intensive Outpatient Programs consist of

scheduled timeslots for treatment throughout the week. The frequency and significant time span of intensive outpatient treatment helps to keep an adolescent on track when he or she is confronted with an environment that may trigger the impulse to relapse. Thus, the Caron Foundation's Adolescent Intensive Outpatient Program offers individual and family sessions as well as two to three hours of intensive adolescent and multifamily group sessions throughout the week. It is designed for adolescents who have a structured activity during the day, such as school or a job. Other types of Intensive Outpatient Programs include Day Treatment that provides a safe structured therapeutic setting for the daytime hours.

Individual, Group and Family Therapy

Also important, but less intensive, are weekly group, individual and family therapies. Individual therapy addresses psychological issues, such as trauma, that may trigger substance abuse. Adolescents develop within families, and families are affected by the substance abuse of their members. Family therapy addresses the entire family in order to promote healthy family functioning and the recovery of the individual members. Many Intensive Outpatient Programs offer combinations of these therapies as part of the intensive program. However, it may be beneficial for the adolescent and family members to continue less frequent sessions after completion of the Intensive Outpatient Program in order to continue the positive changes instituted by the earlier treatment.

Twelve-Step Programs

Twelve-step programs can play an essential role in the lifelong maintenance of sobriety and abstinence. Peer support programs, such as Alcoholics Anonymous, increase motivation for recovery through the support, guidance and confrontation by one's recovering peers. These programs can guide the adolescent through the necessary steps of self-reflection and reparation to build a healthy adulthood.

Twelve-Step programs are not treatment programs because they do not rely on professional counselors and therapists. However, they are an essential adjunct to treatment because they provide a philosophy and support system that encourages sobriety and other positive changes in spirituality, self-reflection and lifestyle. Many formal substance abuse treatment programs, such as those at the Caron Foundation, are based on 12-Step principles and promote participation in 12-Step programs to support long-term recovery.

Treatment Outcomes

Measures of Success

Adolescent substance abuse treatment should not be seen as a one-step intervention that produces a complete cure. Even when adolescents abstain from their primary drug of choice, they do not always remain completely drug free, but continue to abuse other substances (SAMSHA 1997). They also have high relapse rates (Spear and Skala 1995). Successful treatment, thus, must be viewed as a continuum of care from identification of the problem to long-term maintenance of sobriety and abstinence.

Research has found that drug and alcohol treatment successfully reduces substance abuse as well as other negative behaviors in adolescents. In general, research finds that adolescents often do not complete treatment, do better in residential programs than outpatient programs and require longer treatment stays than do adults (Winters 1999b).

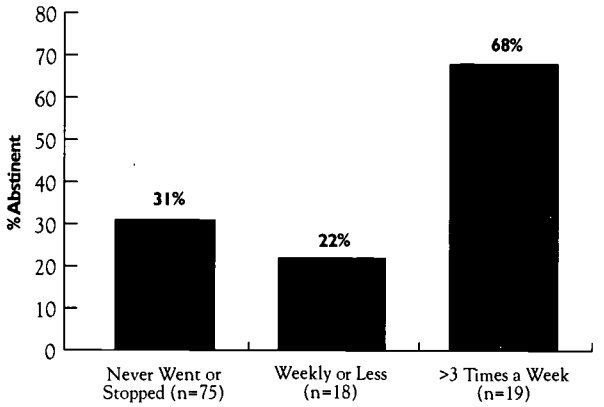
The National Treatment Improvement Evaluation Study (SAMSHA Center for Substance Abuse Treatment 1997) collected and analyzed important data on the outcomes of 482 adolescents and young adults who received publicly funded treatment. These clients may represent the most vulnerable populations and the most difficult group to treat successfully. Measurements taken a year after treatment showed positive outcomes for adolescents and young adults in the reduction of any type of drug use, except for cocaine use, which did not diminish, and alcohol use, which modestly increased. However, significantly fewer adolescents or young adults completed treatment compared to the adult sample.

Length of Stay and Treatment Completion

Treatment duration depends upon many factors, including the type, extent and severity of the adolescent's problems, and the adolescent's motivation and progress in recovery. Like other aspects of treatment, length of stay should be individually determined by thorough and repeated evaluations. However, research conducted on adult patients strongly indicates that residential and outpatient programs generally show effectiveness only with lengths of stay of at least 90 days (NIDA, October 1999).

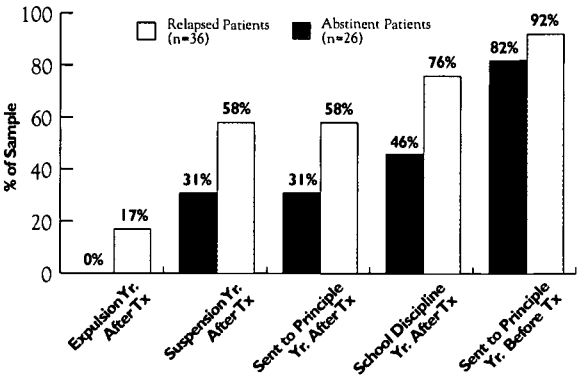
Treatment works better for people who stay with the process from rehabilitation treatment through outpatient care. The Chemical Abuse/Addiction Treatment Outcome Registry (CATOR) is the most extensive database that measures long-term adolescent treatment outcomes. Results of this research by Harrison and Hoffman (Jenson, Howard and Yaffe 1995) indicate

Figure 9: One-Year Abstinence by Extent of Involvement in a Continuum-of-Care



Source: Caron Foundation Adolescent Program One-Year Outcomes Report, 1997.

Figure 10: School Discipline Action for Abstinent vs. Relapsed Patients



Source: Caron Foundation Adolescent Program One-Year Outcomes Report, 1997.

that adolescents who were engaged in 12-Step programs for at least one year following rehabilitation treatment were more successful in maintaining abstinence than those who either did not attend 12-Step meetings or had irregular attendance.

Likewise, another study examined the outcomes of adolescents who attended a treatment program that utilized a 12-Step approach. Alford and colleagues (1991) found that teenagers who completed the program and those who left prematurely showed less substance use following treatment than they showed prior to treatment. However, significantly more teenagers who completed treatment were abstinent at six months following treatment than those who did not complete the program. Abstinence rates, especially for boys, sharply declined after two years, except for youths who continued to attend 12-Step meetings at least once a week.

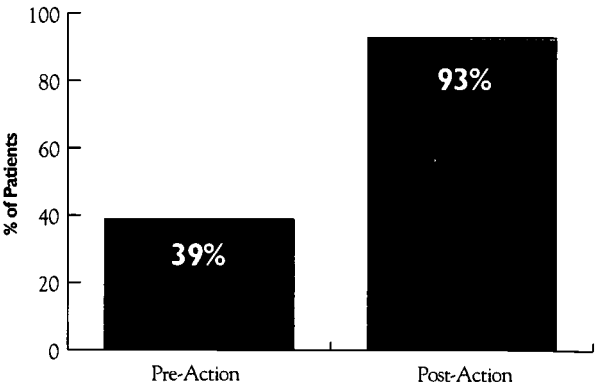
The Caron Foundation has come to similar conclusions about the effectiveness of treatment programs. As a participating organization in the national CATOR study, we found that adolescents who completed treatment, who continued outpatient treatment and whose parents participated in the treatment process were more likely to maintain abstinence for the long term than teenagers who did not meet these three criteria. In addition to achieving higher abstinence rates, adolescents who attended treatment experienced fewer school discipline problems (Caron adolescent comprehensive report 1995).

A follow-up CATOR outcomes study in 1997 supported the conclusions of earlier research. Adolescents who continued involvement in outpatient treatment had much higher rates of success than did adolescents who were not involved in continuing care (Figure 9). Likewise, school discipline problems dramatically decreased for abstinent adolescents (Figure 10).

Engagement in Aftercare

A major challenge in treatment appears to be how to engage adolescents in outpatient treatment following an inpatient stay. Prior to making significant changes in aftercare procedures, the Caron Foundation was able to engage only approximately 40 percent of its adolescents in outpatient care (Figure 11). Engagement was stringently defined as attending at least four outpatient sessions. In order to improve engagement rates, Caron introduced to patients, family, referral sources, and, when necessary, to insurance providers the idea of transitioning from inpatient to outpatient care early in treatment. Patients who could continue in Caron's outpatient facility were given their first appointments as soon as possible post admission, and perhaps, most importantly the Foundation transported these patients to their initial sessions. Family members

Figure 11: Caron Stabilization Patients Who Engage in Caron Outpatient Treatment



Source: Caron Foundation.

also were expected to attend this session to meet the patient's new therapist, become oriented to the facility and review the treatment plan. Caron's changes increased outpatient engagement rates to more than 80 percent for adolescents and adults (Rosenker 1999).

Family Involvement

Since aftercare appears to be such an important part of recovery, it is important to identify factors that may increase a person's motivation to remain in treatment. Family involvement may be one factor. During residential treatment, the Caron Foundation had extremely high success rates in involving parents in the treatment of their adolescents. More than 90 percent of adolescents coming into treatment lived with either or both parents, and the same very high percentage of parents participated in treatment during their youngster's residential stay. However, less than one-third of parents remained involved in aftercare family therapy or support groups. Although almost 70 percent of adolescents, who regularly attended outpatient programs, remained abstinent an entire year after rehabilitation treatment at the Caron Foundation (Caron Foundation adolescent program 1997), staff began to question if higher recovery rates could be achieved through greater family involvement.

The effectiveness of family involvement in treatment began to be researched in the late 1980s (Liddle and Dakof 1995). These sophisticated studies randomly assigned adolescents to a variety of treatments to compare family therapy against other programs. After reviewing this body of research, Liddle and Dakof (1995) concluded that "family therapy can retain families in treatment and significantly reduce drug use in youth" (p.231). A recent meta-analysis of family/couples treatment for drug abuse by Stanton and Shadish (1997) found that family therapy for drug abuse produces more positive outcomes for abstinence than individual counseling, peer group therapy, or family education. Family therapy was found to be equally effective for adults and adolescents. In addition, family therapy frequently had higher treatment retention rates than alternative treatments, so it is possible that family therapy was able to retain a higher proportion of more severe and more difficult cases.

How to Select an Appropriate Treatment Program

A major dilemma faced by parents, school counselors, psychologists and other concerned adults is how to select the appropriate treatment program for the adolescent. Once the adolescent has been identified as having a chemical abuse or addiction problem, it is important to thoroughly evaluate the adolescent to determine the appropriate level of care. As we have seen, there are significant differences among inpatient, residential, and outpatient programs.

The treatment program should be able to address the adolescent's drug or alcohol use as well as medical, psychological, social, vocational/educational, family, spiritual and legal problems. If the treatment program does not specifically treat a certain area, such as vocational training, it should be able to develop a realistic aftercare plan for that problem.

In addition, it is important to consider if the adolescent's developmental, gender and cultural needs are being met. As noted earlier, adolescents have significantly different treatment issues and needs than adults have. Programs that are developed specifically for adolescents appear better than programs that mix adolescents with adults. Likewise, innovative programs that have gender-separate and specific treatment components also may enhance recovery. Programs that serve specific ethnic or religious populations should provide services that support the group's cultural traditions and, when necessary, have bilingual staff and written materials.

The quality of a treatment program may be assessed by its staff. Around-the-clock programs obviously require more staff than outpatient programs and programs that address specific areas require staff qualified in those disciplines. Thus, a medically monitored inpatient program should have qualified medical and nursing personnel, psychiatric and psychological staff, addiction counselors and therapists, while a therapeutic community only may have addiction counselors. Also, one would expect that a 24-hour facility that serves young people with multiple problems would have a much higher staff-to-patient ratio than a less intensive residential or outpatient program.

Programs that support process and outcomes research also may be superior to programs without a research component. Process research constantly measures the program on selected quality indicators, such as patient satisfaction, to assess variation in the delivery of services. It is an essential for maintenance of a program's consistency over time.

Outcomes research, on the other hand, measures changes in patients after they have completed treatment in order to assess how the program impacted the patient's targeted areas of change. It is tempting for consumers to compare outcomes of different programs in order to select the "best" one. However, it is important to remember that programs differ widely in their patient populations and treatment goals. It would be unfair to compare a program designed to treat young people with multiple problems against a program that focuses on adolescents with minimal social, psychiatric and legal issues. Instead, the value of outcomes research

is its usefulness in providing the program with data on its effectiveness and testing innovative treatment components.

Predictors of Adolescent Drug Use

Extensive research has identified a wide variety of risk factors that predict adolescent drug use. These risk factors can be separated into individual, social and cultural factors. Not all children or adolescents who experience these risk factors will use or abuse drugs. Heavy alcohol and drug use appears related to an accumulation of risk factors (Kandel and Davies 1992). Identifying young people who experience a constellation of risk factors can increase the possibility of early intervention before addiction occurs.

Individual Risk Factors

Individual risk factors pertain to a person's psychological make-up and symptoms, perceptions about the danger of drugs, behavior and spirituality.

Psychological and Genetic Links

Psychological and genetic links to substance abuse include a genetic predisposition to alcoholism and addictive disorders. Studies involving adopted children and identical twins point to high relationships between genetic factors and the transmission of alcoholism.

Developmental disorders, such as attention deficit hyperactivity disorder and learning disabilities, also may predispose a person to drug or alcohol abuse. More than one-quarter of adolescents in treatment at the Caron Foundation have been diagnosed with a learning disability or reported experiencing symptoms of a learning disability (Caron adolescent comprehensive report 1995).

Psychological symptoms, such as depression, impulsivity and emotional unsteadiness, may also increase vulnerability to substance abuse. Also, young people who use marijuana to alleviate psychological symptoms are less likely to stop its use than youths who use it for social reasons (Chen and Kandel 1998).

Gender Differences

Male adolescents are more likely to have a combination of conduct disorders and substance abuse, while female adolescents have coexisting affective disorders and substance abuse (Grillo et al. 1998). In addition, girls are more susceptible to substance abuse if they have an eating disorder, such as bulimia or anorexia, or if they have experienced early onset of puberty (CASA 1997). Grillo and his colleagues (1998) examined gender differences on an adolescent psychiatric unit and discovered that the girls were more likely to have oppositional defiant disorder, eating disorders, borderline personality disorder and polysubstance disorders in addition to alcohol abuse.

There also appears to be gender differences between the types of trauma to which children and adolescents are exposed. Adolescent boys in treatment for drug and alcohol problems are more likely than girls to report histories of physical abuse. Likewise, adolescent girls in treatment are more likely than boys to report histories of sexual abuse (Rounds-Bryant et al. 1998). Childhood sexual abuse appears to be a predictor of substance abuse and dependence among adult women. Research studies that question adults about childhood trauma find that women with histories of childhood sexual abuse are much more likely to report drug and alcohol problems than women without histories of childhood sexual abuse (Wilsnack et al. 1997).

Behavioral Risk Factors

Behavioral risk factors include poor school performance, violence and delinquency and sexual promiscuity (CASA 1997). Adolescents who do not achieve good grades or who view themselves as poor students are at risk for substance abuse. Likewise, school dropouts are more likely to abuse drugs and alcohol than those who remain in school. In addition, school dropouts are less likely than graduates to stop using drugs in adulthood (Chen and Kandel 1998).

Teenagers who break the law through behaviors, such as fighting and carrying weapons, are also at risk for substance abuse. In 1993, of the adolescents in New York City who had been in juvenile custody, 60 percent also had abused and/or sold drugs and alcohol (CASA 1997). Also, adolescents who use alcohol and marijuana are more likely than other teenagers to be sexually active and not use protective devices, leading to unwanted pregnancies and sexually transmitted diseases.

Spirituality

The lack of expression of spirituality through religious attendance also appears to be a risk factor for drug use. The less frequently an adolescent attends religious services, the more likely it is that the adolescent will smoke, drink or use marijuana (CASA 1997). In their investigation of the initiation factors to marijuana use, Kandel and Davies (1992) found that frequent attendance at religious services decreases the risk of drug use. It is interesting that almost half of the adolescents who come into substance abuse treatment at the Caron Foundation list "none" for their religious preference (Figure 12).

Social Risk Factors

Social risk factors involve the environments in which children and adolescents spend most of their time and which have the greatest influence over the child's development: family, peers, community and youth culture.

The Family

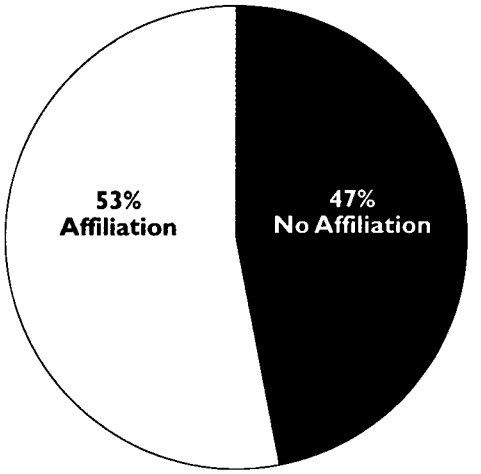
As we have seen in the section on treatment, family involvement can be a major force influencing recovery. Although most parents attempt to do their best, no family is perfect and poor family functioning can become a risk factor for drug abuse. Aspects of family functioning that have a negative effect on adolescent development are family tolerance of substance use and abuse; inadequate parental guidance; and family conflict and poor bonding (CASA 1997).

The lack of parental presence is an important risk factor for adolescents. Adolescents who do not find a parent at home after school are more likely to smoke tobacco regularly, drink and get drunk regularly and use marijuana (Luntz Research Companies 1998). Unsupervised adolescents report greater interest in trying other illegal drugs in the future than teenagers who have a parent at home after school. The more often parents eat with their children, the less likely it is that their children will smoke, drink or use other drugs.

Kandel and Davies (1992) also found a relationship between adolescent marijuana use and parental use of medically prescribed psychotropic drugs. They also found that adolescents who progress to regular marijuana use are more likely to have a family history of psychological or substance abuse problems. It appears that substance abuse may be a family problem because often more than one family member will abuse or be dependent upon drugs or alcohol (Duncan et al. 1997; Bierut et al. 1998). However, the causes for family use are not clear. Theories range from genetic effects in which predisposition to substance abuse is biologically passed to family members, to social modeling theories which posit that behaviors are learned from observation.

High levels of family conflict and poor bonding also are associated with substance abuse among the young. Childhood sexual and/or physical abuse often is a precursor to adolescent and adult substance abuse for both males and females (CASA 1997). Almost 40 percent of adolescents who come to the Caron Foundation for treatment have histories of either physical and/or sexual abuse (Caron adolescent comprehensive report 1995).

Figure 12: Adolescent Spirituality



Source: Caron Foundation.

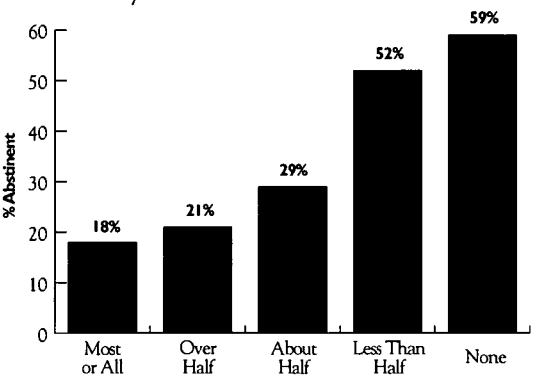
Peer Influences

Youths exist in systems larger than their families. They go to school, hold part-time jobs and interact in a wide variety of ways with the larger community. Peers play important roles in recovery and are major influences in the risk for drug use. Adolescents surveyed in Pennsylvania reported they were most likely to use drugs or alcohol at parties, at their friends' homes or at home (Diagnostics Plus, Inc. 1996).

Peer involvement with substance abuse becomes a powerful predictor for relapse. Among the adolescents who attended inpatient treatment at the Caron Foundation, we found that the greater the extent of substance use among a teenager's friends, the lower the likelihood that the teenager would be able to maintain abstinence following treatment (Figure 13).

Often the way teenagers think about their friends can influence their susceptibility to substance abuse (CASA 1997). If adolescents overestimate substance use among their friends, they will be more likely to

Figure 13: One-Year Abstinence Rates by Peer Chemical Use



Source: Caron Foundation Adolescent Program One-Year Outcomes Report, 1997.

abuse drugs and alcohol. Adolescent girls may be more vulnerable than boys to peer pressure since their initiation to marijuana use has been related to the number of friends who used the drug (Kandel and Davies 1992).

The Larger Environment

It is important not to neglect the risk factors for drug use in the larger environment of the adolescent. Neighborhoods in which children are exposed to drug use or where people do not look out for each other's children increase a child's risk for substance abuse (CASA 1997). Although drugs are more easily found in poor areas, disconnected communities exist in all socioeconomic levels.

Of course, the influence of popular culture cannot be underestimated. Images on television, in the movies, music and magazines, as well as on the Internet often glamorize the use of drugs and alcohol. A recent survey of the 200 most popular movie rentals from 1996 and 1997 found more than 90 percent of the movies showed alcohol and tobacco use and 22 percent of movies depicted illegal drug use, although less than half of the films showed consequences of substance use (Roberts, Hendrikson and Christenson 1999). Children and adolescents may become seduced by these media into thinking that drugs and alcohol are not dangerous, but fun. CASA (1997) found that organizations such as the Partnership for a Drug-Free America that advertise anti-drug messages have difficulty getting broadcast time on television stations.

Interconnections of Risk

Although we can separate risk factors into separate categories, it is important to remember that one risk factor in one category does not automatically result in drug abuse. For example, a genetic predisposition to alcohol dependence will result in alcoholism only when the individual lives in an environment that encourages drinking. As a different example, a dysfunctional family relationship that results in physical or sexual abuse may trigger other risk factors, such as depression and posttraumatic stress syndrome, which together increase one's vulnerability to substance abuse.

Likewise, Garnier and her colleagues (1997) found interconnecting links to drug use, school performance and family values. Exposure to drugs in childhood increases the risk for adolescent drug use and increased stressful life events. Drug use and stressful life events are both related to poor school performance that can result in the student dropping out, increasing the risk for continued drug abuse.

No one lives in a vacuum. The interconnections of factors leading to risk for substance abuse highlights the interconnections in human development among the person, society and culture. These interconnections complicate treatment and prevention efforts because more than one factor must be addressed. However, the interconnections also provide multiple openings for treatment and prevention programs. As we have seen, treatment programs can focus on the adolescent, his or her family and peer relationships. Prevention programs, as we will see in the next section, also have multiple pathways to affect change.

Prevention Strategies

Certain teenagers appear to be protected from the dangers of substance abuse because they possess a number of positive characteristics (CASA 1997). These teenagers have good social and problem-solving skills. They also have a firm sense of personal identity and are able to resist peer pressure. They are involved in spiritual or religious activities. They are optimistic about their futures and hope they will be at least as successful as their parents. These adolescents are achieving scholastically close to their ability levels. They also view marijuana as dangerous, think that drugs are morally wrong and view substance use as a choice. In addition, these adolescents have parents who are actively involved in their lives.

A review of this description reveals the multiple and interconnected factors that prevent substance abuse. Children learn spiritual, academic and lifestyle values in their homes, school and communities. The greater the commitment and positive involvement by all people who touch the lives of children and adolescents, the better the prognosis for successful prevention of substance abuse.

Community Programs

A number of programs are available throughout neighborhoods and communities to help children and adolescents. Instead of focusing entirely on drug prevention, these programs strive to address the wide variety of skills adolescents needs to negotiate their passage into adulthood. In fact, programs that are primarily geared to drug education have low rates of success. Information alone often is not enough to turn adolescents away from a culture of substance abuse.

Community programs that are more successful in reducing adolescent substance abuse include peer programs, life-skills training groups, community partnerships and comprehensive community-based

programs (CASA 1997). These programs offer alternative activities to substance abuse and positive adult guidance and role models. Teens learn healthy life skills and form positive friendships through diverse activities, such as outdoor weekend programs and building houses for Habitat for Humanity.

Effective community-based drug abuse prevention programs are in place throughout the United States. Some of these programs that have been objectively measured and shown to be effective include Project Star in Los Angeles, Project Family in Iowa and Strengthening Families Program in Salt Lake City, Utah ("Drug abuse prevention" n.d.). These programs generally combine comprehensive school programs, parent training programs and mass media efforts. Positive results of the programs include reductions in substance abuse, as well as reductions in family conflict, aggressiveness and problem behaviors, and increases in the ability of youth to resist peer pressure toward substance use.

Communities can work together to reduce adolescent drug abuse through programs that:

- Involve recreational and educational activities.
- Focus on adolescent developmental needs.
- Include parents, schools and the media.

School-Based Prevention Programs

Disparity Between Students and Administration

Schools are very important in the culture of adolescence since most of the teenager's day is spent in school and since educators play such important roles in guiding young people. However, there appears to be a significant disparity between adolescents and their educators in their perceptions of the danger of drug use.

For four consecutive years a survey has been conducted on adolescents, teachers and principals about the dangers of drug use (Luntz Research Companies 1998). Each year one-third of the teenagers have listed drugs as the most important problem they face, while their teachers and principals ranked drugs as only third on the list of problems that teenagers face. Although marijuana use is widespread, the overwhelming majority of teachers and principals surveyed believed that most of their students had not tried marijuana. More than one-fourth of adolescents said they had observed drug transactions at their schools, leading the researchers to conclude, "Rather than being a safe haven from the pressures of drugs and drug pushers, America's middle schools and high schools seem to attract both users and sellers" (Luntz Research Companies 1998).

Prevention Programs

Once schools become involved in drug-use prevention efforts, research shows that their active participation works. Dr. David O'Connell, Clinical Director of the Caron Foundation, has identified a number of factors that create effective drug education programs for high risk adolescents. "Ideally, drug and alcohol education programs should be comprehensive, developmentally focused and based on the knowledge of risk factors associated with chemical abuse" (O'Connell 1991). He also identified parental involvement and attention to comorbid psychological disorders and conduct disorders as important components of prevention and treatment programs.

The Caron Foundation provides student assistance services to school districts serving more than 10,000 students, teachers and parents (Caron Foundation student assistance 1999). Services include assessment, consultation, educational programming, support group facilitation, maintenance and training. Educational programs, such as Caron's First Time Offenders program, target college students who have undergone disciplinary action for breaking the college's drug and alcohol policies.

The Midwestern Prevention Project, which targeted 50 schools in 15 communities (Pentz, et al.1989), was designed to study the outcomes of community-based prevention. The program focused on school-based education for sixth and seventh graders, parental involvement and mass media coverage. Initial outcomes in Kansas City indicated a reduction in drug use at one year following the intervention for children who had not previously used drugs or alcohol. The researchers also found that current users of illicit substances were initially helped by the prevention effort (Chou et al. 1998). Cigarette, marijuana and alcohol use decreased among students who had been users of these substances as shown by measurements taken six months after the conclusion of the program. The students were followed for 3.5 years. The final measurement at 3.5 years showed much smaller reductions than seen six months after the end of the program. Although prevention programs are helpful in reducing substance abuse, these results suggest that it may be necessary to continue such programs on a long-term basis to ensure maintenance of substance-free behaviors.

Effective School-Based Programs

- Address other psychological, conduct and learning issues.
- Meet developmental needs.
- Continue throughout adolescence.

How Families and Individuals Can Help

The Partnership for a Drug-Free America conducted a survey of almost 10,000 young people and parents in 1998 and found that drug use among adolescents is significantly lower for teenagers who are taught the dangers of drug use by their parents. These teenagers were 42 percent less likely to use drugs than teenagers who were not told of the dangers of drugs at home (Grillo et al. 1998).

However, while almost 100 percent of the parents who were surveyed said they have talked to their children about the dangers of drugs, less than 65 percent of the teenagers recalled such conversations! Only half of the parents felt they had done a good job discussing drugs and less than half of the parents reported having more than one talk in the past year with their children. Also, parents surveyed did not believe that their children were at risk for drug use. Only 14 percent of parents thought their children may have used marijuana, while 42 percent of the teenagers acknowledged trying it (Grillo et al. 1998).

Early adolescence appears to be the prime time to have thorough discussions about drugs. The Partnership for a Drug-Free America found that a major shift occurs in the value of parental advice between fourth and eighth grades. In fourth grade almost three-quarters of children surveyed said they wanted their parents to give them guidance about drugs. This dramatically dropped to fewer than 20 percent of eighth graders. As we have seen earlier in the section on vulnerability, drug use also increases dramatically during early adolescence. Clearly, the message for prevention is:

- Increase your awareness of the dangers of children's exposure to drugs.
- Become knowledgeable about the dangers of drugs and alcohol.
- Talk to adolescents about the dangers of drugs and alcohol.
- Have many conversations about the dangers.
- Begin these conversations when your child is young.

New on the Caron Foundation Web Site

Parents who suspect or know a child is abusing drugs or alcohol may wish to connect with other parents who have had similar experiences.

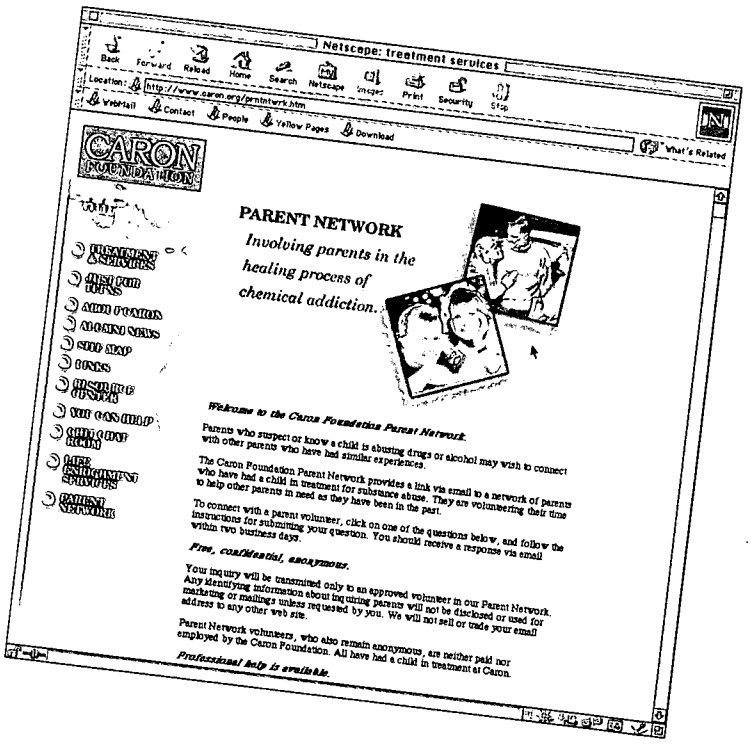
The Caron Foundation Parent Network provides a link via email to a network of parents who have had a child in treatment for substance abuse. They are volunteering their time to help other parents in need since they have been in the same situation.

Parent Network is free, confidential and anonymous.

Your inquiry will be transmitted only to an approved volunteer in our Parent Network. Any identifying information about inquiring parents will not be dispersed or used for marketing or mailings. We will not sell your email address to any other website.

Parent Network volunteers, who also remain anonymous, are neither paid nor employed by the Caron Foundation. All have had a child in treatment at Caron.

For more information, visit the Parent Network at www.caron.org



NOTE FOR PARENTS — *David Rosenker*

Vice President, Adolescent Services,
Caron Foundation

Suspecting that your son/daughter may have a substance abuse problem is a difficult situation for any parent. Just admitting that there is a problem is difficult enough. When you compound that with trying to decipher the many pieces of information about substance abuse, it can create even more stress. Once you are armed with all this information, you then have to try and decide if the situation is a problem or an abuse situation. We would hope that during the course of reading the aforementioned material you have gained significant information as to what constitutes abuse, what is dependency, the numerous types of drugs available and lastly, the different avenues of treatment available.

Suggestions for concerned parents include:

1. If you are concerned about your son/daughter's use and you believe that they would be unwilling to seek help through pressure from you, then we would suggest going forward with a professional intervention. An intervention is a very sophisticated process that involves persons that are significant to your son/daughter. They may include representatives from his/her school, friends, brothers and sisters, cousins, aunts, uncles etc. The intervention is well planned through thorough preparation on the part of the family, then implemented with a professional counselor to help you through the process.

2. Contact your son/daughter's school. Many school districts have what is called a student assistance team. These teams are specifically designed to address the needs of students with suspected drug and alcohol issues, as well as mental health disorders. They can help walk you through the process to get help. In some cases, they can utilize pressure from the school to encourage your son/daughter to get help.

3. Contact Caron's Parent Network. Visit our web site (**www.caron.org**), click on the Parent Network button and request to talk to other parents, via e-mail, that have been in similar situations with their kids. They can help walk you through the process of identifying whether your son/daughter has a problem, how to pick a facility, how to intervene on your son/daughter. You may communicate with these volunteer parents as often as you would like. You may also contact a staff member from our adolescent services through this same web site location.

As parents, none of us want our children to either repeat the same mistakes we may have made or, make any mistakes, especially ones that could prove fatal. It is difficult to stand by and watch our son/daughter make mistakes knowing full well that they are harmful, and oftentimes dangerous. Some parents enable this pattern to continue very unwittingly by allowing and encouraging children to develop patterns of irresponsible behavior. We prevent them from learning how to function effectively in the world in which they live by protecting them from consequences and taking on their responsibilities. This is usually done out of feelings of protectiveness, self-doubt, guilt, fear and performance anxiety. In addition, sometimes our behaviors as parents help this process to continue by keeping their secrets, giving in to avoid conflict and doing our child's emotional work. Remember, as a parent you are responsible for setting limits, establishing consequences, creating structure and cohesion as a family, working as a team and providing a safe and secure environment.

Above all—***ask for help.*** It is the most helpful and empowering thing any parent can do.

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